

525 We claim:

1. A refrigerator including a freezer compartment having an access opening and a closure member for closing the access opening, the refrigerator comprising:

an ice maker being disposed within the freezer compartment for forming ice pieces;

an ice storage bin mounted to the closure member below the ice maker for receiving

5 ice from the ice maker, the ice storage bin having a bottom opening;

a motor mounted on the closure member; and

an auger disposed within the ice storage bin and drivingly connected to the motor,

wherein upon energization of the motor, the auger moves ice pieces from the ice storage bin through the bottom opening for dispensing from the ice storage bin.

2. The refrigerator according to claim 1, further comprising:

an ice discharge chute through the closure member below the bottom opening of the ice storage bin wherein upon energization of the motor, the auger moves ice pieces from the ice storage bin through the bottom opening to the ice discharge chute.

3. The refrigerator according to claim 1, further wherein the auger is supported in a vertical orientation within the ice storage bin.

4. The refrigerator according to claim 1 further wherein the ice storage bin is at least partially formed out of a transparent material such that the amount of ice pieces in the ice storage bin can be readily visually determined.

- the auger having a shaft portion passing through the ice crushing region;**

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wherein upon energization of the motor, the auger moves ice pieces from the ice storage bin through the bottom opening to the ice discharge chute.

12. The refrigerator according to claim 10 further comprising:

13. The refrigerator according to claim 10 further wherein the ice storage bin comprises:

5 the auger having a shaft portion passing through the ice crushing region;

at least one stationary blade mounted within the ice crushing region such that the ice crusher blade rotates past the stationary blade,

14. The refrigerator according to claim 13 further comprising:

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15. The refrigerator according to claim 10 further wherein the ice storage bin comprises:

an transparent upper ice bin member having a bottom edge;

a lower ice bin member connected to the lower edge of the upper ice bin member, the lower ice bin member defining an ice crushing region through which the ice pieces must pass when ice pieces are discharge through the bottom opening, the ice crushing region having an inlet opening;

the auger having a shaft portion passing through the ice crushing region;

at least one ice crusher blade rotatably connected to the shaft portion for rotation within the ice crushing region; and

at least one stationary blade mounted within the ice crushing region such that the ice crusher blade rotates past the stationary blade,

wherein when the motor is rotated in a first direction the ice pieces are crushed prior to being dispensed through the chute and when the motor is rotated in a second direction whole ice pieces are dispensed through the ice chute.

16. The refrigerator according to claim 10, further comprising:

a mounting plate connected to the closure member wherein the ice storage bin is removably mounted to the mounting plate for support on the closure member.

17. The refrigerator according to claim 16 further wherein:

the mounting plate includes at least one pin;

the ice storage bin includes at least one receptacle corresponding to the pin and a locking mechanism to secure the ice storage bin to the mounting plate.

18. A refrigerator including a cabinet defining a freezer compartment having an access opening, the refrigerator comprising:

a door hingedly mounted to the cabinet for closing the access opening, the door including an inner liner, an outer wrapper and a foam material therebetween;

5 a mounting plate connected to the inner liner;

an ice discharge chute extending through the door adjacent the mounting plate;

a support member connected to the inner liner below the mounting plate;

an ice storage bin removably mounted to the mounting plate for receiving ice pieces, the storage bin having a bottom opening;

10 a motor supported by the support member below the ice storage bin, the motor having a drive shaft extending from the support member to the mounting plate; and

an auger rotatably disposed within the ice storage bin for coupling with the drive shaft wherein upon energization of the motor, the auger moves ice pieces from the ice storage receptacle through the bottom opening to the ice discharge chute.

19. The refrigerator according to claim 18 further comprising:

an ice maker mounted within the freezer compartment for delivering ice pieces to the ice storage bin.

20. The refrigerator according to claim 18 wherein the foam material is added to the door after the inner liner, outer wrapper, mounting plate and support member have been assembled such that the foam bonds to these components and secures them into position.

21. The refrigerator according to claim 18 wherein the support member is a cup-shaped housing for receiving the motor.

22. The refrigerator according to claim 18 further comprising:

a conduit extending from the support member to the mounting plate through which the drive shaft extends.

23. The refrigerator according to claim 22 further comprising:

a housing mounted onto the outer wrapper defining an ice service area;

a wiring conduit extending from the support member to the housing.

24. The refrigerator according to claim 18 further wherein the ice storage bin is at least partially formed from a transparent material such that the amount of ice pieces in the ice storage bin can be readily visually determined.

25. The refrigerator according to claim 18 further wherein the ice storage bin comprises:

an upper ice bin member having a bottom edge;

a lower ice bin member connected to the lower edge of the upper ice bin member, the lower ice bin member defining an ice crushing region through which the ice pieces must pass when ice pieces are discharge through the bottom opening, the ice crushing region having an inlet opening;

the auger having a shaft portion passing through the ice crushing region;

at least one ice crusher blade rotatably connected to the shaft portion for rotation within the ice crushing region; and

at least one stationary blade mounted within the ice crushing region such that the ice crusher blade rotates past the stationary blade.